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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,938	06/17/2005	Reiner Anton	2002P08684WOUS	6840

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER	
LEADER, WILLIAM T	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
11/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,938	ANTON ET AL	
	Examiner	Art Unit	
	WILLIAM T. LEADER	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-16 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Receipt of the papers filed on June 30, 2009, is acknowledged. Claims 17, 19 and 20 have been canceled. Claims 10-16 and 18 are pending.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The amendment has overcome the rejection of claims 10, 13, 14, 16 and 18 under 35 U.S.C. 102(b) over Nee et al.

Claim Rejections - 35 USC § 112

4. Claims 10-16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Applicant's amendment has resolved some of the points raised in the previous office action. Nevertheless, the scope of lines 12-15 of claim 10 which recite the step of "adapting each of the at least two blocks to a constituent of the alloy in each case to achieve an optimum duration and nature of the deposition of each of the constituents" is considered to remain unclear. The term "optimum" and variants appear in two locations in applicant's specification, paragraphs [0043] and [0044]. But the specification does not indicate how it is determined when an optimum has been reached, or how much deviation is permissible for the deposit to be still considered optimum.

Claim Rejections - 35 USC § 103

6. Claims 10, 13, 14, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (GB 2 167 446A) in view of Nee et al (US 4,869,971) and Lashmore (US 4,461,680).

7. Applicant has amended independent claim 10 to include limitations previously recited in dependent claims 17 and 19. As indicated in the previous office action, the Foster et al patent is directed to an electrodeposited composite coating having a composition M_1CrAlM_2, where M_1 is iron, cobalt or nickel or two or all of these metals, and M_2 is Y, Si, Ti or a rare earth element. The coating is provided by a composite electro-deposition of M_1 as a metal matrix containing particles of $CrAlM_2$. See the abstract and page 1, lines 47-54. The coating provides protection of substrates intended to operate in hostile environments by providing improved resistance to one or more of oxidation, corrosion and erosion. See page 1, lines 5-9. Foster additionally discloses that the substrate may be a high temperature aerofoil made from a super-alloy (page 1, lines 1-19) and that the substrate alloy may be nickel-based alloy (column 1, lines 21-22).

8. The process recited in applicant's claim 10 differs from the process of Foster by reciting the use of a plurality of repeated voltage pulses combined in a sequence that comprises different blocks, and applying a constant low potential to establish a base current. Nee and Lashmore are interpreted and applied as in the previous office action.

9. In summary, The Nee et al patent is directed to an electrolytic deposition process for forming an alloy deposit of at least two constituents as a multilayer deposit on a substrate. The multilayer deposit comprises a sequence of essentially repeating groups of layers. Each group of

layers includes a layer of a first electrodeposited material and a layer of a second electrodeposited material. The first and second electrodeposited materials are distinct materials. The electrodeposit has outstanding mechanical and other properties (abstract; column 2, lines 34-40). As described in the abstract, the process includes the steps of immersing the substrate in an electrodeposition bath and repeatedly passing a charge burst of a first electric current and a second electric current through the electrodeposition bath to the substrate. The first electric current is a pulsed current with a first pulsed-on/off waveform and a first peak current density which is effective to electrodeposit the first electrodeposited material. This corresponds to a first block of voltage pulses. The second electric current has a second waveform and a second current density which is effective to electrodeposit the second electrodeposited material. This corresponds to a second block. A diagram of the applied electric current is shown in figures 1A and 1B. The layers may be distinct from one another in terms of chemical composition, crystal structure, crystal grain size, morphology or other property (column 3, lines 4-10). Figure 3 shows the weight percent copper content of an electrodeposited brass alloy versus average current density for electrodeposition currents.

10. The Lashmore patent is directed to a process for electroplating nickel-chromium alloys. The electroplating is carried out using pulsed current. An example of the pulsed current is shown in figure 1. As shown in figure 1, the base current may be zero, or a current indicated by the dashed line may be superimposed. A zero base current or a superimposed base current are alternatives. See column 6, lines 40-44.

11. It would have been obvious at the time the invention was made to have applied blocks of pulsed current as taught by Nee et al to form a multilayer deposit in the process of Foster because

improved mechanical properties would have been obtained, and to have applied a low potential base current between the pulses because this is a recognized alternative to a zero base current as shown by Lowenhiem.

12. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (GB 2 167 446A) in view of Nee et al (US 4,869,971) and Lashmore (US 4,461,680) as applied to claims 10, 13, 14, 16 and 18 above, and further in view of GB1521130 for the reasons given in the previous office action

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (GB 2 167 446A) in view of Nee et al (US 4,869,971) and Lashmore (US 4,461,680) as applied to claims 10, 13, 14, 16 and 18 above, and further in view of Taylor et al (US 6,319,384) for the reasons given in the previous office action

Response to Arguments

14. Applicant's arguments filed June 30, 2009, have been fully considered but they are not persuasive. At the bottom of page 5 to the top of page 6 of the Remarks, applicant argues that the '680 reference to Lashmore is silent as to the interpulse period between blocks, and that neither '680 nor any of the cited prior art teaches or suggests "applying a constant low potential between the at least two different blocks to establish a base current". This argument is not convincing. Contrary to applicant's arguments, Lashmore is considered to teach this limitation. At column 6, lines 40-44, Lashmore discloses that the base height of the applied current may be

either 0 A/dm^2 (shown as a solid line in figure 1) or 5 A/dm^2 (shown as a dashed line in figure 1). The 5 A/dm^2 dashed line represents a base current that is applied between current pulses. This is what is described in applicant's specification at paragraph [0042] where it is stated "It is optionally possible for a low potential (base current) to be applied both during the pulse sequences and during the interpulse period." Lashmore clearly shows the application of a low potential (base current) during the interpulse period. The period between blocks of current pulses is also a period between pulses (interpulse period) and is considered to be suggested by Lashmore which shows that a base current may be applied between all pulses. With respect to the rejection of claim 11-16 and 18, applicant advances the same argument which, for the reasons given above, is not deemed to be persuasive.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM T. LEADER whose telephone number is (571) 272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Leader/
November 3, 2009

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795